Caution

Be sure to read this manual before servicing. To ensure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Plasma Monitor. Be sure to read cautionary items described in the manual before servicing. These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that described in the operating instructions unless you are qualified to do so.

Service Warning

1. Since the Panel Module and the front Filter are made of glass, handling the broken Module and Filter carefully and with caution in order not to receive injury.
2. Replacement work should be started after the Panel Module and the AC/DC Power supply have become sufficiently cool.
3. Special care should be taken when working near the display area in order not to damage its surface.
4. The Panel Module should not be touched with bare hands in order to protect its surface from blemishes and damage.
5. It is recommended that you use clean soft gloves during the replacement work in order to protect not only the display area of the Panel Module but also yourself.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.
# CAUTION FOR SAFETY

Please read this page before repairing the monitor. The following safety precautions are designed to help you stay safe and prevent accidents during the repair work.

- Please take note of these cautionary flags.

<table>
<thead>
<tr>
<th>Warning</th>
<th>This means &quot;Potential to sustain injury or even death.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caution</td>
<td>This means &quot;Potential to sustain breakage or irreparable damage.&quot;</td>
</tr>
</tbody>
</table>

- Also note these cautionary icons

<table>
<thead>
<tr>
<th>CAUTION</th>
<th>This means &quot;CAUTION&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUST</td>
<td>This means &quot;MUST&quot;</td>
</tr>
<tr>
<td>POTENTIAL ELECTRIC SHOCK</td>
<td>This means &quot;POTENTIAL ELECTRIC SHOCK&quot;</td>
</tr>
<tr>
<td>DO NOT</td>
<td>This means &quot;DO NOT&quot;</td>
</tr>
</tbody>
</table>

### WARNING

- **Follow instructions.**
  The cabinet, chassis, and labels are parts that require attention. You must follow the caution notes and safety instructions presented throughout this User Manual to prevent damage to them or injury to yourself.

- **Prevent electric shock.**
  Exercise caution while working on the device as the Monitor contains high voltage parts and power supply. It is possible to sustain severe injury or death if you accidentally touch the wrong parts. You must disconnect the power supply while servicing, reassembling, or changing parts. If you touch a live connection it is possible to sustain severe injury or death.

- **Use recommended components.**
  Use only the recommended components or component that structurally identical to the originals. This is to ensure safety and reliability. Pay special attention to parts in the parts list and circuit diagrams marked with ⚠️. If you use non-recommended components, then electric shock or fire may result.

- **Must use same types of wires and components.**
  The Monitor uses special tubes and tapes made from insulated materials. Moreover, some materials are kept from making contact with the PWB for the sake of safety. Internal leads are kept from hot parts or high voltage parts by means of clamps or other measures. As such, you must restored these parts to their original conditions in order to prevent electric shock or fire.

- **Perform safety check when done.**
  Every part (such as removed screws, components, and wiring) must be restored to their prior conditions after servicing. Be sure to check everything that was repaired for damage or mistakes. Also measure the insulated impedance with a meg-ohm meter to confirm that the impedance value is more than 4M ohm. If the impedance value is less than 4M ohm, then electric shock or fire may result.

- **Do not try to check the HDCP code and combination circuit.**
  Never remove the shield case protecting the HDCP code and combination circuit.


**PRECAUTIONS**

- **Cleaning the monitor’s plasma screen panel**
  Before cleaning the monitor, turn it off and disconnect the power plug from the power outlet. To prevent scratching or damaging of the plasma screen face, do not knock or rub the surface with sharp or hard objects. Clean the screen with a soft cloth moistened with warm water and dry with a second soft cloth. If it is not enough, then use a cloth with mild detergent. Do not use harsh or abrasive cleaners.

- **Cleaning the monitor’s cabinet**
  Use a soft cloth to clean the monitor’s cabinet and control panel. When excessively soiled, dilute a neutral detergent in water, wet and wring out the soft cloth in it, gently clean the cabinet, and then wipe it down with a dry soft cloth. Never use acid/alkaline detergents, alcoholic detergents, abrasive cleaners, powder soaps, OA cleaners, car wax, glass cleaners, and so on. They will cause discoloration, scratches or cracks.

**1. Features**

- **High definition Plasma display panel**
  The 42-inch color plasma display panel, with a resolution of 1024 (H) x 1024(V) pixels, creates a widescreen picture. This panel features a thin form factor and can be hung on a wall with an optional wall mounting kit.

- **High Performance Digital Processor**
  This panel displays a wide range of personal computer signals from 640 x 400 VESA, 640 x 480 VGA to 1024 x 768, 1280 x 1024 XGA.(RGB Analog input).

- **Easy-to-use remote control and on-screen display system**
  The included remote control operates all Monitor functions. Furthermore, the on-screen display system shows the status of the control settings in an easy-to-view fashion.

- **Power saving system**
  When connected to a VESA DPMS-compliant PC, the monitor cuts its power consumption while idle.
2. Specifications

**Panel**

- Display dimensions: Approx. 42 inches (922 (H) x 522 (V) mm, diagonal 1059mm)
- Resolution: 1024 (H) x 1024 (V) pixels

**Net dimensions**

- 1036 (W) x 775 (H) x 330 (D) mm (With stand) / 1036 (W) x 713 (H) x 93 (D) mm (Without stand)

**Net weight**

- 42.5 kg (With stand) / 35 kg (Without stand)

**Ambient conditions**

- Temperature: Operating: 0°C to 40°C, Storage: -15°C to 60°C
- Relative humidity: Operating: 20% to 80%, Storage: 20% to 90% (non-condensing)

**Power supply**

- AC100 - 240V, 50/60Hz

**Power consumption/at standby**

- <350W / <1W

**Audio output**

- Built in 10W + 10W (8 Ω) speakers

**Input terminals**

- **ANALOG RGB input terminal (D-sub 15-pin)**
- **ANALOG RGB/HDMI audio input terminal (3.5mm Stereo Mini Jack)**

**Video signals**

- 0.7 Vp-p

**Sync signals**

- H/V separate, TTL level [2kΩ]
- H/V composite, TTL level [2kΩ]

**Recommended signal**

- 17 modes

**Input signals**

- **COMPOSITE VIDEO input terminal (RCA)**
- **L/R COMPOSITE AUDIO input terminal (RCA)**
- **S-VIDEO input terminal (RCA)**
- **Y-Pb/Cb Pr/Cr input terminal (RCA)**
- **L/R Y-Pb/Cb Pr/Cr AUDIO input terminal (RCA)**
- **HDMI input terminal (HDMI 19-pin)**

**Video signals**

- Composite video: PAL, SECAM, NTSC3.58, NTSC4.43
- Component - Y/Cb/Cr Pr/Cr video: 480i, 576i, 480p, 576p, 1080i/50, 1080i/60, 720p/50, 720p/60
- HDMI: HDMI input signal

**Output Signal**

- **Video Output: Composite video output terminal (RCA)**
- **Audio Output: L/R audio output terminal (RCA)/Subwoofer output terminal (RCA)**

**Recommended signal**

- 19 modes

---

**Applicable video signals for each input terminal**

<table>
<thead>
<tr>
<th>Signal Type</th>
<th>RCA</th>
<th>HDMI</th>
<th>D-sub</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>ANALOG RGB</td>
<td>Composite Video</td>
<td>S-Video</td>
<td>Component</td>
<td>DVD/STB</td>
</tr>
<tr>
<td>HDMI</td>
<td>○</td>
<td></td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>COMPOSITE</td>
<td>○</td>
<td></td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>S-VIDEO</td>
<td>○</td>
<td></td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Y-Pb/Cb Pr/Cr</td>
<td>○</td>
<td></td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

*It takes at least 30 minutes to attain the maximum picture quality.*

(O: Available)
3. Component names

- Main unit

**Control panel**

- All Adjustment buttons are located on the bottom of the control panel.
- Indications for each button's function can be found on the inside of the control panel cover.

<table>
<thead>
<tr>
<th>Button</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. POWER</td>
<td>5. VOL ▲</td>
</tr>
<tr>
<td>2. UP ▲</td>
<td>5. LEFT ◄</td>
</tr>
<tr>
<td>3. DOWN ▼</td>
<td>6. INPUT</td>
</tr>
<tr>
<td>4. VOL ▼</td>
<td>6. EXIT</td>
</tr>
<tr>
<td>4. RIGHT ►</td>
<td>7. MENU</td>
</tr>
</tbody>
</table>

**Normal Button Action**

**Button Action when MENU engaged**

- Power lamp
- Remote-control receiver
- Main power switch

The main power switch is located at the back, on the right side.
1. Power Button
2. Recall Button
3. Quick Button
4. P. Mode Button
5. PC ADJ. Button
6. Menu Button
7. Exit Button
8. SEL Button
9. Up/Down/Left/Right Buttons
10. RTN Button
11. Video Button
12. PC Button
13. PIP Input Button
14. PIP Swap Button
15. Aspect Button
16. Sleep Button
17. Zoom-/+ Button
18. Freeze Button
19. Mute Button
20. Vol +/- Button
4. Service points

- Lead-free solder
  This product uses lead-free solder (unleaded) to help protect the environment. Please read these instructions before attempting any soldering work.

  **Caution:** Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead-free solder can splatter at high temperatures (600°C).

- Lead-free solder indicator
  Printed circuit boards using lead-free solder are engraved with an "F."

- Properties of lead-free solder
  The melting point of lead-free solder is 40-50°C higher than leaded solder.

- Servicing solder
  Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended. Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

Precautions when using leaded solder

- Remove all lead-free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead-free solder has been completely melted (do not apply the soldering iron without solder).

- Servicing soldering iron
  A soldering iron with a temperature setting capability (temperature control function) is recommended. The melting point of lead-free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450°C)

<table>
<thead>
<tr>
<th>Part</th>
<th>Soldering iron temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting (chips) on mounted PCB</td>
<td>320°C±30°C</td>
</tr>
<tr>
<td>Mounting (chips) on empty PCB</td>
<td>380°C±30°C</td>
</tr>
<tr>
<td>Chassis, metallic shield, etc.</td>
<td>420°C±30°C</td>
</tr>
</tbody>
</table>

- The PWB assembly which has used lead free solder

  (1) POWER/EMI PWB, AUDIO POWER PWB, RS-232 PWB, AUDIO PWB, KEY PAD PWB, IR PWB, I/O PWB, SPEAKER CONNECTOR PWB, HDMI PWB
  (2) MAIN PWB
  (3) POWER MODULE
  (4) PDP MODULE (is all lead free solder. X-SUS PWB, Y-SUS PWB, LOGIC PWB, ADDRESS PWB, SDM PWB)
5. Adjustment & Software Update

This model has a factory mode, where the technician can access and adjust some of the color temperature settings. The factory mode has several different appearances, depending on the input signal.

Preliminary
To access the Factory Mode, the Plasma Monitor must be running.

- **Color temperature adjustments**

Follow the procedures below to make the color temperature adjustments.

Factory setting:
- Cool: x=0.268 +/- 0.01, y=0.283 +/- 0.01
- Warm: x=0.314 +/- 0.01, y=0.327 +/- 0.01
- Natural: x=0.285 +/- 0.01, y=0.293 +/- 0.01
- Black & White: x=0.335 +/- 0.01, y=0.343 +/- 0.01

Note: That a colorimetry meter (such as a Minolta CA-200) is required to measure the actual screen color temperature.

1. Press MENU button on remote control to display the PDP OSD menu.

2. Select to color temperature function page under VIDEO item.

3. Press SLEEP button three times on remote control to display the adjustment RGB parameter.

4. Press ◀ ▶ to select Natural or Warm modes.
Page intentionally left blank
6. Troubleshooting

The flow chart shown below will help you to troubleshoot your Monitor set with it doesn’t display normally. Each procedure offers a simple way to check for system errors. Before starting, ensure that there is a signal in and that the Monitor is turned on.

- Power turn on issue

```
Power cannot be turn on (LED does not light)

Is the input voltage applied to Power supply unit? (CN61①③)

No

AC inlet

Yes

Power switch

AC Fuse 5HTP10 TL.510A 250V

Filter PWB

No

Connect the wire properly.

Test again

Yes

Check if the Power Cord has been well connected to TV?

No

Power supply unit

Yes

Are the voltages applied to CN10 ①⑤⑥ pins and CN11 ①③④⑩ pins of Power supply unit?

(CN61) 110V ①L ③W
(CN10) ①+5V ①+12V ①+12V
(CN11) ①+5V ③+3.3V ③+3.3V ⑩+5V

PBC-Main

Note: Voltage shown for CN10 and CN11 are at Power On State. Power off voltages are 0V, except CN11 Pin 10, this voltage is always present.
```
No sound issue

Picture is displayed. But no sound

Take off the back cover and check if wires of the speakers terminals have been well connected to the PCB-Main and speakers?

Yes

Are the voltages applied to CN2①② of the power supply unit?

No

Power supply unit

Yes

Are the signals applied to P23①②③④ of the PCB-Main?

No

PCB-Main or PCB-I/O

Yes

Are there signals on the speaker terminals?

No

PCB-Audio

PCB-Speaker Connector

Yes

Speakers

(CN2) ①+15.5~16V  ②GND
(P23) ①NC  ②L  ③GND  ④R
No picture issue

Picture is not displayed (LED is lighting)

- Is the LED red or green?
  - Red
  - Is voltage applied to CN11 (st-5v)?
    - No
    - PCB-Main
    - Yes
    - Input signal cables or PCB-Main

- Green
  - Is it the power saving mode?
    - Yes
    - Is the voltages of CN10/CN11 on the power supply unit?
      - Yes
      - PCB-Main
      - No
      - Power supply unit

- No
  - Are the voltages applied to CN64(10) of the power supply unit correct?
    - Yes
    - Panel module
    - No
    - Power supply unit

(CN10) ①5V ②⑥12V
(CN11) ①5V ③④3.3V ⑩st-5V

Note: Voltage shown for CN10 and CN11 are at Power On State. Power off voltages are 0V, except CN11 Pin 10, this voltage is always present.
Remote Control doesn’t work

Remote controller doesn’t work.

Try if another Remote Controller works?

Yes → Replace the Remote Controller.

No → Check if batteries are placed correctly?

No → Put new batteries to the remote control

Yes → Test again

Check if the wire of PCB-IR has been well connected to the PCB-Main?

No → Connect the wire properly.

Yes → Change the PCB-IR then check if it works.

No → Change PCB-Main then connect all wires properly.
- **Key pad doesn’t work**

```
Key pad doesn’t work.

Take off the back cover and check if the wire of **PCB-Speaker connector** has been well connected to the **PCB-Key Pad** and **PCB-Main**?

Yes

Change **PCB-Key Pad** and connect all wires properly. Check if it works

No

Connect the wire properly

Test again

---

Change **PCB-Speaker connector** and connect all wires properly. Check if it works

Yes

---

No

Change the **PCB-Main**.
```
No PC signal (Analog RGB)

- No PC signal.
- Check if PC source is working on other display?
  - Yes
  - Check if the D-Sub cables have been well connected to the PDP?
    - Yes
    - Check if the signal frequency is higher than 1024x768?
      - Yes
      - Adjust the signal frequency.
      - No
      - Take off the back cover.
    - No
    - Connect the D-Sub cables properly
  - No
  - Check PC by PC Service Provider
- Yes
- Change the PCB-Main
- Test again
No signal issue (Composite, SV, YCbCr, YPbPr)

- No signal

  Check if the signal source is available and been well connected?

    No

    Enable source and connect the signal wire properly.

    Yes

    Check if the PCB-I/O has been well connected to the PCB-Main?

      No

      Connect the PCB-I/O properly.

      Yes

      Take off the back cover.

      Check if Wire Ass’y 31P has been well connected to PCB-Main?

        No

        Connect Wire Ass’y 31P properly to the PCB-Main.

        Yes

        Change the PCB-I/O then check the signal

          No

          Change PCB-Main board

          Yes

Test again
- **No HDMI signal issue**

  **No signal**

  Check if the signal source is available and been well connected?

  Yes

  Take off the back cover.

  Check if the **PCB-HDMI** has been well connected to the **PCB-Main**?

  Yes

  Check if **Wire Ass’y 31P** has been well connected to **PCB-Main**?

  Yes

  Change the **PCB-HDMI** then check the signal

  No

  Change **PCB-Main** board

  Yes

  **Enable source and connect the signal wire properly.**

  No

  Connect **PCB-HDMI** properly.

  Test again

  Yes
- Software can't be updated

Can not update software

Check if **RS-232 Cable** has been well connected to the PDP?  
Yes

Take off the back cover.

No

Connect **RS-232 Cable** properly.

Test again

Check if all wires have been well connected to the **PCB-RS232 & PCB-Main**?  
Yes

Change the **PCB-RS232** and see if it works?  
Yes

No

Connect the wires properly.

No

Change the **PCB-Main**.
- **Power board issues**

1. No power

   ![Flowchart for No Power](chart1)

   - NO POWER
   - NO Vs, Va, Vcc, STB
     - FUSE
     - NG
     - impedance check
       - D001
       - NG
       - D001
     - impedance check
       - Q003/Q004
       - NG
       - Q003/Q004/R005 etc
     - impedance check
       - Q201
       - NG
       - Q200/Q201/Q202/D210 etc
     - impedance check
       - Q301
     - NG
     - Q301/Q302/Q303/D310 etc
   - See NO PICTURE & SOUND
     - IC101, R005

2. No picture and sound

   ![Flowchart for No Picture & Sound](chart2)

   - NO PICTURE & SOUND
   - NO Vs, Va, Vcc,
     - FUSE
     - NG
     - SEE NO POWER
     - Over 130V
     - PC201, PC202, D210 etc
   - Vcc
     - NG
     - check voltage
       - D020(k)-J051
       - Over 130V
       - PC201, PC202, D210 etc
       - IC001, D601~D604, RL001, PC001, PC003, IC002 etc
     - Under 130V
     - D151, D101 etc

   OK
   NG
3. No picture

**NO PICTURE**
- NO Vs, Va, Vcc
  - impedance check Vs LINE
    - NG
      - OK
        - impedance check Va LINE
          - OK
            - SW ON
              - Va:no uprise
              - Vs:down after up
                - Q303, PC301, PC302, D310, etc
              - Q501, D510, Q500, PC501, PC502, etc
          - NG
            - D351
          - OK
            - Open connector CN64
              - NG
                - D551, D550
              - OK
                - PDP module Va
                  - NG
                - PDP module Vs
                  - NG
7. Block Diagram

- Plasma Monitor
MPF7421 Block diagram

- Input
- Inrush protect RL002
- RL001
- Rectifier D001
- PFC IC001
- C01, C201
- T101
- Reg
- STB Vcc
- 5VSB
- STB3.3V
- Reg
- T201
- LV
- Reg
- VAudio
- 15.5V
- 12V
- 12V
- A6V/D6V/Vcc
- 5.1V
- Reg
- 3.3V
- 3.3V
- T301
- Va
- Reg
- Vs
- 60V
- T501
- Vs
- 80V
- AC detect
- I C 202 (IC)
8. Connection Diagram
### 9. Wiring Block Diagram

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Wire Ass'y</th>
<th>Part No.</th>
<th>HITACHI Part No.</th>
<th>Item No.</th>
<th>Wire Ass'y</th>
<th>Part No.</th>
<th>HITACHI Part No.</th>
<th>Item No.</th>
<th>Wire Ass'y</th>
<th>Part No.</th>
<th>HITACHI Part No.</th>
<th>Item No.</th>
<th>Wire Ass'y</th>
<th>Part No.</th>
<th>HITACHI Part No.</th>
<th>Item No.</th>
<th>Wire Ass'y</th>
<th>Part No.</th>
<th>HITACHI Part No.</th>
<th>Item No.</th>
<th>Wire Ass'y</th>
<th>Part No.</th>
<th>HITACHI Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P205</td>
<td>W10/10P</td>
<td>E057400100</td>
<td>12</td>
<td>P207</td>
<td>W10/10P</td>
<td>E794650006</td>
<td>14</td>
<td>P201</td>
<td>W2/2P</td>
<td>E057402007</td>
<td>16</td>
<td>P211</td>
<td>W5/5P</td>
<td>E057405008</td>
<td>18</td>
<td>P209</td>
<td>W4/4P</td>
<td>E057404011</td>
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<tr>
<td>2</td>
<td>P203</td>
<td>W11/10P</td>
<td>E057411001</td>
<td>13</td>
<td>P212</td>
<td>W5/5P</td>
<td>E057409006</td>
<td>15</td>
<td>P208</td>
<td>W9/9P</td>
<td>E057409902</td>
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<td>4</td>
<td>P208</td>
<td>W9/9P</td>
<td>E057409002</td>
<td>15</td>
<td>P9003A</td>
<td>W4/4P</td>
<td>E057408005</td>
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<tr>
<td>5</td>
<td>P9003A</td>
<td>W4/4P</td>
<td>E057404011</td>
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<tr>
<td>7</td>
<td>P814</td>
<td>W3/3P</td>
<td>E057403016</td>
<td>18</td>
<td>P215</td>
<td>W3/3P</td>
<td>E057401009</td>
<td>20</td>
<td>P204</td>
<td>W31/30P</td>
<td>E057431005</td>
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**Board**

- A Main Board (PWB-0891)
- B I/O Board (PWB-0899)
- C Key Pad Board (PWB-0876)
- D Power Module (PWB-0877)
- E RS-232 Board (PWB-0887)
- F Power/EMI Board (PWB-0905)
- G Audio Power Board (PWB-0905)
- H Audio Board (PWB-0807)
- I Speaker Connector Board (PWB-0906)
- J HDMI Board (PWB-0892)
- K Power Module (PWB-0878)
Panel Boards Layout

See page 41 for p/n's located behind Main Board.
10. Basic Block Diagram
11. Printed Wiring Board Diagram

- Main Board – Top Side
Main Board – Bottom Side
Audio Transfer Board – Top Side(L)/Bottom Side(R)
HDMI Board — Top Side(L)/Bottom Side(R)
Power Board
12. Disassembly Diagram

- Mechanical

MECHANICAL DISASSEMBLY

MODEL NAME: 42HDM12
Packing
### 13. Replacement Parts List

#### Mechanical & Packing part list

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## Electrical part list

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